STATEMENT OF BASIS

as required by LAC 33:IX.3109 for a draft permit for which a fact sheet under LAC 33:IX.3111 is not prepared, for draft **Louisiana Pollutant Discharge Elimination System Permit No. LA0064611; AI 51328; PER20090001** to discharge to waters of the **State of Louisiana** as per LAC 33:IX.2311.

The **permitting authority** for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

I. **THE APPLICANT IS:** Village of Hall Summit
Hall Summit Sewerage Treatment Plant
Post Office Box 98
Hall Summit, Louisiana 71034

II. **PREPARED BY:** Todd Franklin

DATE PREPARED: June 5, 2009

III. **PERMIT ACTION:** reissue LPDES permit LA0064611, AI 51328; PER20090001

LPDES application received: March 16, 2009

The application was not submitted prior to the expiration date of the permit

Previous LPDES permit effective: June 1, 2003
Previous LPDES permit expired: May 31, 2008

EPA has not retained enforcement authority.

IV. **FACILITY INFORMATION:**

A. The application is for the discharge of treated sanitary wastewater from a publicly owned treatment works by an overland treatment system serving the Village of Hall Summit.

B. The permit application does not indicate the receipt of industrial wastewater.

C. The facility is located on LA Highway 788 and Corbit Drive, in Hall Summit, Red River Parish.

Front Gate Coordinates: Latitude 32° 10' 1" North
Longitude 93° 17' 49" West

D. The treatment facility consists of an aeration pond. Effluent is then sprayed onto the North and/or South Field. The effluent then travels to a chlorination pit for disinfection, prior to discharge.

E. Outfall 001

Discharge Location: Latitude 32° 9' 57" North
Longitude 93° 17' 54" West

Description: treated sanitary wastewater commingled with stormwater runoff

Design Capacity: 0.05 MGD

Type of Flow Measurement that the facility is currently using: V-Notch Weir

V. RECEIVING WATERS:

The discharge point is physically located in Subsegment 100709; however, the discharge flows into a Grand Bayou tributary; thence into Grand Bayou in Subsegment 100710 of the Red River Basin. This Subsegment is not listed on the 2006 Water Quality Integrated Report as an impaired waterbody.

The designated uses and degree of support for Subsegment 100710 of the Red River Basin are as indicated in the table below[1/]:

Degree of Support of Each Use						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
N/A	Insufficient Data	Insufficient Data	N/A	N/A	N/A	N/A

[1/]The designated uses and degree of support for Subsegment 100710 of the Red River Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2006 Water Quality Management Plan, Water Quality Inventory Integrated Report, Appendix A, respectively.

VI. ENDANGERED SPECIES:

The receiving waterbody, Subsegment 100710 of the Red River Basin, is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U. S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated November 17, 2008, from Rieck (FWS) to Nolan (LDEQ) (EDMS Document Number 40815712). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

VII. HISTORIC SITES:

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the 'Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits' no consultation with the Louisiana State Historic Preservation Officer is required.

VIII. PUBLIC NOTICE:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit

decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

For additional information, contact:

Mr. Todd Franklin
Permits Division
Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

IX. PROPOSED PERMIT LIMITS:

Subsegment 100710, Grand Bayou Tributary-from headwaters to Grand Bayou, is not listed on LDEQ's Final 2006 Water Quality Integrated Report as impaired. However, Subsegment 100710 was previously listed as impaired for chlorides, sulfates, and total dissolved solids (TDS), for which the below TMDL has been developed. The Department of Environmental Quality reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional TMDL's and/or water quality studies. The DEQ also reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDL's for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards.

The following TMDL's have been established for Subsegment 100710:

TMDLs for Fecal Coliform Bacteria, Chlorides, Sulfates, Total Dissolved Solids, and Turbidity for Selected Subsegments in the Red River Basin, Louisiana

As per the TMDL,

> No domestic wastewater facilities with permit limits for chloride, sulfate, or TDS could be found in the Red River Basin, although it is possible that discharges from such facilities could have slightly elevated levels of these parameters. Therefore, these facilities were given wasteload allocations (WLAs) using facility flow and water quality criteria. As long as point source discharges of treated wastewater contain parameter levels at or below these permit limits, they should not be a cause of exceedances of water quality criteria.

The permitted flow for the Hall Summit Sewerage Treatment Plant is 50,000 GPD. The criteria for chloride, sulfate, and TDS are 26 mg/l, 9 mg/l, and 79 mg/l, respectively. Therefore, the calculated daily load mass limitation is calculated using the following equation:

Mass loading limit = (chloride, sulfate, TDS criteria, mg/l) x 8.34lbs/gal x 0.05 MGD

Therefore, the mass loading limits for chloride, sulfate, and TDS was calculated to be 10.8 lbs/day, 3.8 lbs/day, and 32.9 lbs/day, respectively. A compliance schedule will be placed into the permit to allow

the facility time to take the appropriate actions to meet the effluent limitations.

Pre-Application Treatment

The permittee utilizes an overland flow method for wastewater treatment. Overland flow systems are a method of land application and wastewater reuse capable of meeting advanced treatment levels. In this type of system, wastewater is applied at the top of a gently sloping terrain and allowed to flow over the surface of the ground to the bottom where it is collected, disinfected, and discharged. However, municipal wastewater often contains rags, paper, hair and other large articles that can bind and clog orifices and valves in surface and sprinkler distribution systems. Therefore, pre-application treatment is required to prevent operating problems with the distribution system and nuisance conditions such as odor during storage.

It is the intent of this Office to protect in-stream conditions during times of critical or low flow. As such, LAC 2311.A.1, requires permits for the discharge of pollutants from any point source into waters of the state. Since the application field is not included as waters of the state, effluent limitations and monitoring requirements will not be required for discharge to the application field. However, since the Village utilizes an aerated pond system for pretreatment, every attempt should be made to meet limitations equivalent to secondary treatment as established by LAC 33:IX.5905.A and B and LAC 33:IX.711.D.2.

Post Application Effluent Limitations

Overland flow systems provide advanced tertiary treatment to secondary treated wastewater. The wastewater is treated in the saturated top layer of the soil and by bacteria and algae attached to the vegetation. Wastewater is treated as it passes through the soil by filtration, adsorption, ion exchange, precipitation, microbial action, and plant uptake. In addition, microbes attached to the vegetation to extract nutrients. Overland flow systems provide significant reductions in BOD and TSS. Nitrogen is removed through nitrification/denitrification and crop uptake. Phosphorus removal is limited due to the minimum amount of percolation, but is held in the soil and serves to enrich the soil. Some wastewater is lost through evaporation and transpiration. Very little wastewater is passed onto the groundwater, due to the use of impermeable soils. The remaining wastewater is collected at the bottom of the slope, disinfected and discharged into nearby waters of the state. (*Process Design Manual for Land Treatment of Municipal Wastewater*, USEPA, US Army Corps of Engineers, and US Department of Agriculture, 1977)

Interim Effluent Limits:

Outfall 001

Interim Effluent Limits are being placed into the permit to allow the facility, if necessary, to upgrade in order to meet the newly imposed chloride, sulfate, and TDS limits.

Interim limits shall begin the effective date of the permit and expire three (3) years from the effective date of the permit.

All requirements and conditions found in the final effluent limits shall apply in the interim period, with the exception of the requirements for chloride, sulfate, and TDS. During the interim period, the facility will only have a reporting requirement to allow the facility a time to gather information and adjust the plant accordingly.

Effluent Characteristic	Monthly Average (lbs/day)	Basis
Chloride	Report	A chloride, sulfate, and TDS limit shall be required for this facility according to the *TMDLs for Fecal Coliform Bacteria, Chlorides, Sulfates, Total Dissolved Solids, and Turbidity for Selected Subsegments in the Red River Basin, Louisiana*. Therefore, in the interim period, a reporting requirement is proposed for informational gathering purposes.
Sulfate	Report	
Total Dissolved Solids (TDS)	Report	

Final Effluent Limits:

OUTFALL 001

Final limits shall become effective three (3) years from the effective date of the permit and expire on the expiration date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
$CBOD_5$	---	10 mg/l	15 mg/l	Limits are in accordance with the *Update and TMDL to a Wasteload Allocation for the Hall Summit Municipal Wastewater Treatment Facility*, dated June 9, 1997 (EDMS Document Number 30313501)
TSS	---	15 mg/l	23 mg/l	
Ammonia-Nitrogen	---	10 mg/l	20 mg/l	
Chloride	10.8	---	---	Limits are in accordance with the *TMDLs for Fecal Coliform Bacteria, Chlorides, Sulfates, Total Dissolved Solids, and Turbidity for Selected Subsegments in the Red River Basin, Louisiana*, dated March 27, 2007. (http://www.epa.gov/region6/water/npdes/tmdl/2007/louisiana/final/2redtmdls_f.pdf)
Sulfate	3.8	---	---	
TDS	32.9	---	---	

Other Effluent Limitations:

1) **Fecal Coliform**

The discharge from this facility is into a water body (wetland), which has a designated use of Secondary Contact Recreation. However, Primary Contact Recreation limits of 200/100 ml (Monthly Average) and 400/100 ml (Weekly Average) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgment as an added measure for public safety, and due to the fact that existing facilities have demonstrated

an ability to comply with these limitations using present available technology.

2) **pH**

According to LAC 33:IX.3705.A.1., POTW's must treat to at least secondary levels. Therefore, in accordance with LAC 33:IX.5905.C., the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time.

3) **Solids and Foam**

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

STORMWATER/RAINFALL RUNOFF CONDITIONS:

It is the goal of this Office to protect water quality uses and uphold water quality standards, especially during times of critical or low flow. Periods of rainfall runoff may not be considered critical conditions. However, during periods of rainfall all of the pretreatment wastewater may not infiltrate, may runoff, may pond in low areas, may erode, and may be washed to surface waters without adequate advanced treatment. On the other hand, the effluent BOD_5 and TSS concentrations during rainfall events have been similar to dry weather conditions. However, the mass discharge of these constituents may increase proportionally to both the intensity and duration of the rainfall event.

Stormwater discharges for the Village's treatment system are highly variable in terms of flow and the relationship between discharges and water quality in general can be complex, not lending itself to the existing methodologies for deriving numeric water quality-based effluent limitations. Considering design capacity of the facility and the area of the application field, a measured rainfall event was derived that would approach the facility's design capacity without exceeding the design capacity. For the Village's treatment facility **inclement weather** shall be defined by the following equation:

Application field	=	4 acres	
1 acre	=	43,560 ft^2	
Area	=	4 acres X 43,560 ft^2/acre	= 174,240 ft^2
Volume	=	area X depth	
	=	174,240 ft^2 X 0.46"/12"	= 6,652.8 ft^3 in 24 hours
cubic feet/sec	=	$\frac{\text{volume}}{\text{24 hr/day X 3600 s/hr}}$	
	=	$\frac{6{,}652.8\ ft^3}{\text{24 hr/day X 3600 s/hr}}$	
	=	0.077 cfs	
MGD	=	0.077 cfs X 0.646 (conversion factor)	
	=	0.05 MGD (design capacity of the facility)	

Given the area of the application field, it was determined that a rainfall event of 0.46" would equal approximately the volume of wastewater capable to being treated, or design capacity, of the facility. Therefore, **any rainfall event of at least 0.46", without at least a one hour subsidence, shall be considered inclement weather**. After 0.46" of rainfall, the permittee will suspend discharges to the application field when practical. Once the rain has stopped, the facility should not resume discharging to the application field for one (1) hour following the episode of inclement weather.

X. PREVIOUS PERMITS:

LPDES Permit No. LA0064611: Effective: June 1, 2003
Expired: May 31, 2008

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type
Outfall 001				
Flow	Report	Report	1/week	Measure
$CBOD_5$	10 mg/l	15 mg/l	1/month	Grab
TSS	15 mg/l	23 mg/l	1/month	Grab
Ammonia-Nitrogen	10 mg/l	20 mg/l	1/month	Grab
Fecal Coliform Colonies/100 ml	200	400	1/month	Grab
pH	Range (6.0 su – 9.0 su)		1/month	Grab

XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:

A) Inspections

A review of the files indicates the following most recent inspection performed for this facility:

Date – 9/9/2008
Inspector – LDEQ
Findings and/or Violations - Due to Hurricane Gustav, the Department made a phone call to the facility. According to the record, no problems were noted as a result of the hurricane.

B) Compliance and/or Administrative Orders

A review of the files indicates that no recent enforcement actions have been administered against this facility.

C) DMR Review

Please see the attached DMR review. The DMR review was for the time period of March 2007 through February 2009.

Please note that the DMR review revealed several violations of the $CBOD_5$ effluent limitations. A referral will be submitted to the Enforcement Division to address the $CBOD_5$ effluent violations.

XII. ADDITIONAL INFORMATION:

Reopener Language

The Louisiana Department of Environmental Quality (LDEQ) reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional water quality studies and/or TMDL's. The LDEQ also reserves the right to modify or revoke and reissue the permit based upon any changes to established TMDL's for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as requested by the permittee and/or as necessary to achieve compliance with water quality standards. Therefore, prior to upgrading or expanding this

facility, the permittee should contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.

In accordance with LAC 33:IX.2903., the permit may be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitations issued or approved under sections 301(b)(2)(c) and (D); 304(b)(2); and 307(a)(2) of the Clean Water Act, if the effluent standard or limitations so issued or approved:

a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
b) Controls any pollutant not limited in the permit; or
c) Requires reassessment due to change in 303(d) status of waterbody; or
d) Incorporates the results of any total maximum daily load allocation, which may be approved for the receiving water body.

Mass Loadings

Final effluent loadings (i.e. lbs/day) have been established based upon the permit limit concentrations and the design capacity of 0.05 MGD.

Effluent loadings are calculated using the following example:

Chloride: 8.34 lb/gal x 0.05 MGD x 26 mg/l = 10.8 lb/day

Monitoring Frequency and Sample Type

At present, the Monitoring Requirements, Sample Types, and Frequency of Sampling as shown in the permit for Outfall 001 are standard for facilities of flows between 0.02 and 1.0 MGD.

Outfall 001

Effluent Characteristics	Monitoring Requirements	
	Measurement Frequency	Sample Type
Flow	1/week	Measure
$CBOD_5$	1/month	Grab
Total Suspended Solids	1/month	Grab
Ammonia-Nitrogen	1/month	Grab
Fecal Coliform Bacteria	1/month	Grab
pH	1/month	Grab
Chloride	1/quarter	Grab
Sulfate	1/quarter	Grab
Total Dissolved Solids	1/quarter	Grab

Please be aware that the Department has the authority to reduce monitoring frequencies when a permittee demonstrates two or more consecutive years of permit compliance. Monitoring frequencies established in LPDES permits are based on a number of factors, including but not limited to, the size of the discharge, the type of wastewater being discharged, the specific operations at the facility, past compliance history, similar facilities and best professional judgment of the reviewer. We encourage and invite each permittee to institute positive measures to ensure continued compliance with the LPDES permit, thereby qualifying for reduced monitoring frequencies upon permit reissuance. If the Department can be of any assistance in this area, please do not hesitate to contact us. As a reminder, the Department will also consider an increase in monitoring frequency upon permit reissuance when the permittee demonstrates continued non-compliance.

Compliance Schedule

The permittee shall achieve compliance with the **FINAL EFFLUENT LIMITATIONS** and **MONITORING REQUIREMENTS** as specified in accordance with the following schedule:

ACTIVITY	DATE
Achieve Interim Effluent Limitations and Monitoring Requirements	Effective date of permit
Achieve Final Effluent Limitations and Monitoring Requirements	Three (3) years from the effective date of the permit

The above listed activities must be achieved on or before the deadline date. Additionally, the permittee shall submit a progress report outlining the status of all facility improvements on a yearly basis until compliance is achieved.

Within 14 days of completion of the necessary steps to reach compliance with the Final Effluent Limitations and Monitoring Requirements, the Permittee shall notify the Department of Environmental Quality - Office of Environmental Services in writing that the steps have been completed.

The Permittee shall achieve sustained compliance with Final Effluent Limitations.

No later than 14 days following a date for a specific action (as opposed to a report of progress), the permittee shall submit a written notice of compliance or noncompliance.

Management Requirements

In accordance with LAC 33:IX.2701.E and LAC 33:IX.2707.K.3, the permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Therefore, the permittee shall develop and implement a Management Requirement Plan which shall address (1) maintenance and operation of the facility and (2) maintenance and operations of the application field.

General and specific requirements of the plan will be designed to prevent or minimize potential for the release of pollutants from ancillary activities; including material storage areas, plant site runoff, in-plant transfer, process and material handling areas, loading and unloading operations, water treatment areas, and operation and maintenance of equipment to the waters of the State through site runoff, spillage or leaks, wastewater disposal, or drainage from raw material storage areas. Specific conditions of the plan will be designed to assure the facility provides optimal treatment with optimal efficiency, including: wastewater storage, buffer zones, disinfection, vegetation, distribution, and terrace slope maintenance.

Pretreatment Requirements

Based upon consultation with LDEQ pretreatment personnel, general pretreatment language will be used due to the lack of either an approved or required pretreatment program.

XIII TENTATIVE DETERMINATION:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Statement of Basis.

XIV REFERENCES:

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 8, "Wasteload Allocations / Total Maximum Daily Loads and Effluent Limitations Policy," Louisiana Department of Environmental Quality, 2007.

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 5, "Water Quality Inventory Section 305(b) Report," Louisiana Department of Environmental Quality, 2006.

Louisiana Water Quality Management Plan / Continuous Planning Process, Vol. 3, "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2008.
Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2008.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program," Louisiana Department of Environmental Quality, 2008.

Low-Flow on Streams in Louisiana, Louisiana Department of Environmental Quality, March 2000.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

LPDES Permit Application to Discharge Wastewater, Village of Hall Summit, Hall Summit Sewerage Treatment Plant, March 16, 2009.